PRS: Physics Reconstruction and Selection
HCAL/JetsMET group

Jet/MET response without EE

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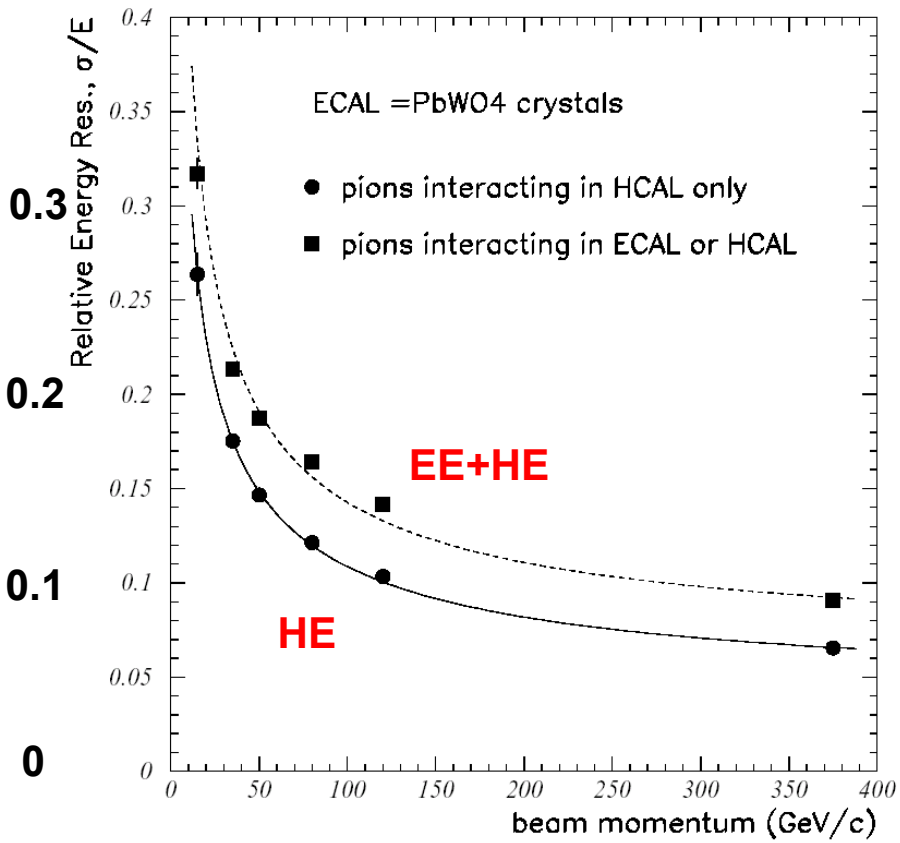
EE vs no-EE

Jet/MET response ?

Contributions:

- **Single particle response**
  - **resolution**
  - **e/pi**
- **eta-phi segmentation**
  - **- coarse without EE -**
- **dead material**
  - **- more with EE –**
- **hermeticity**
  - **- no difference -**

Resolution for pion
('95 Test Beam Data)

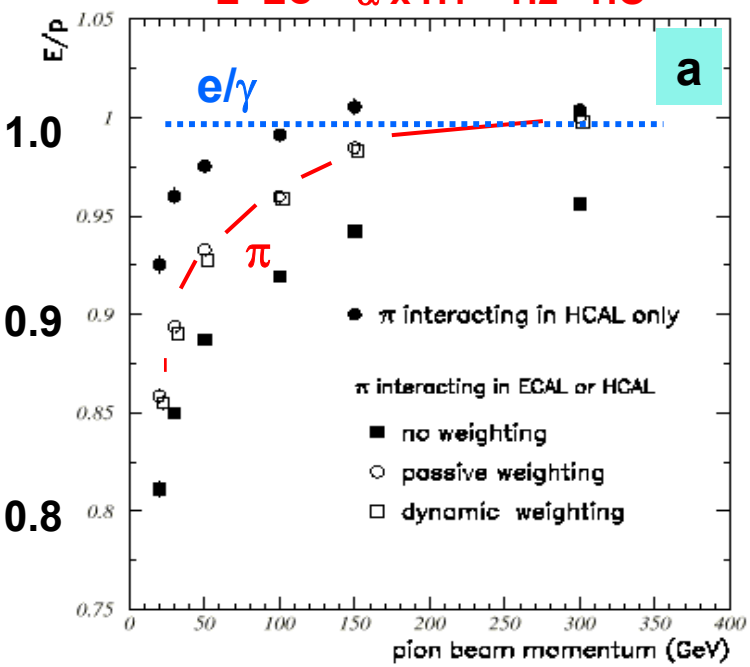


P = 0 **200** **400GeV**

EE vs no EE
e/π

96'H2 Test Beam Data

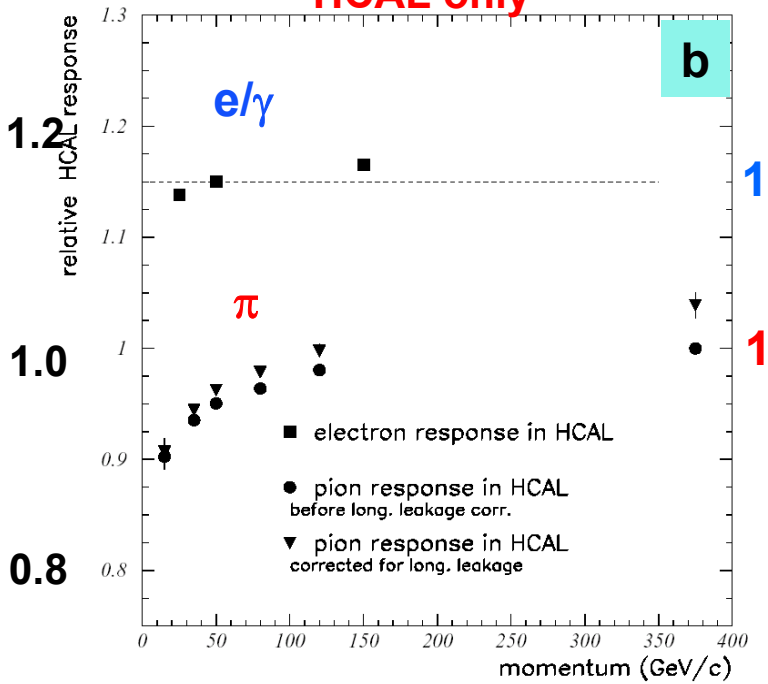
E=EC + α x H1 + H2 +HO



P= 0 200 400GeV

95'H4 Test Beam Data

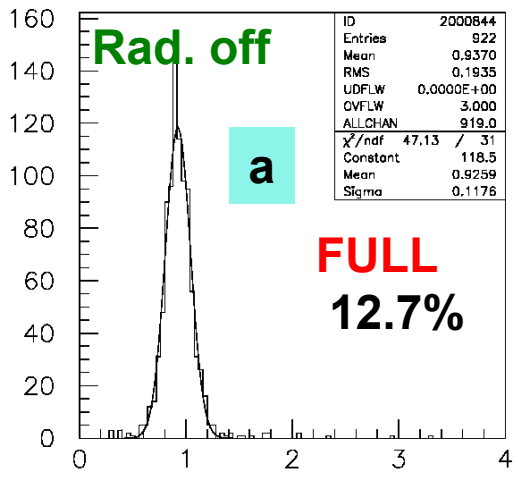
HCAL only

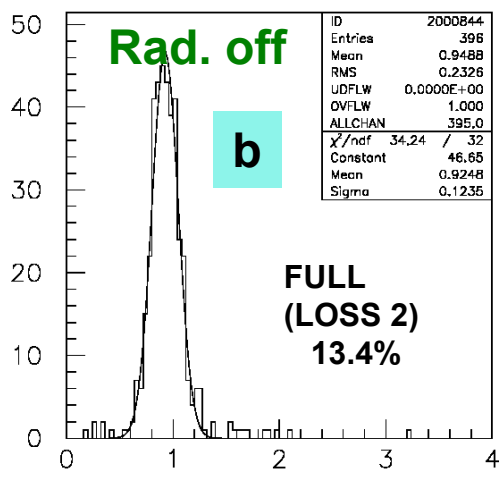


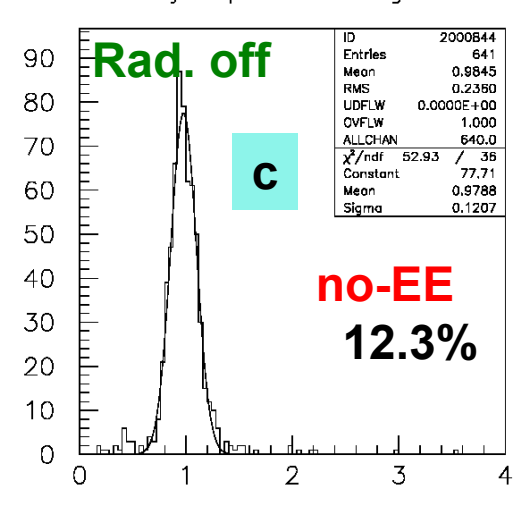
0 200 400GeV

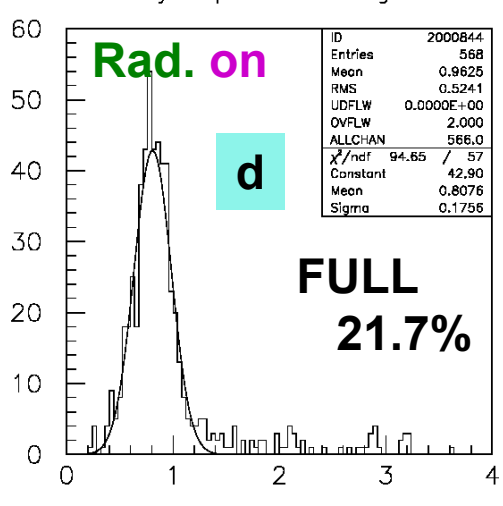
Single pion resolution – "without EE" is better
e/pi – "with EE" is better
→ Who wins- resolution or e/pi- for jets and MET?

Mass Z'(120) → j j







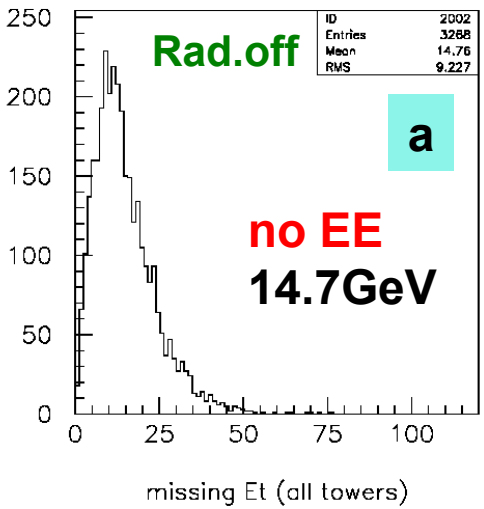


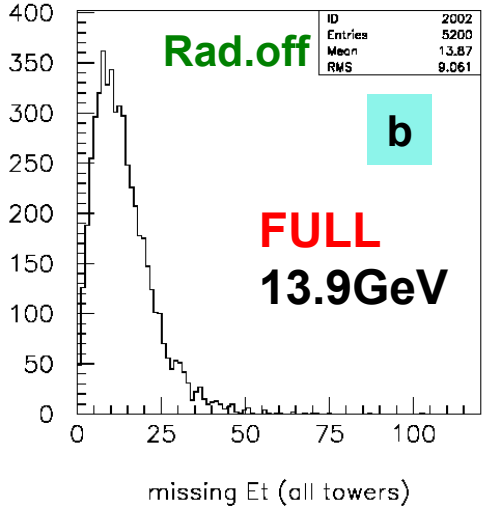
At least one jet in the endcap

No difference between FULL and no-EE!

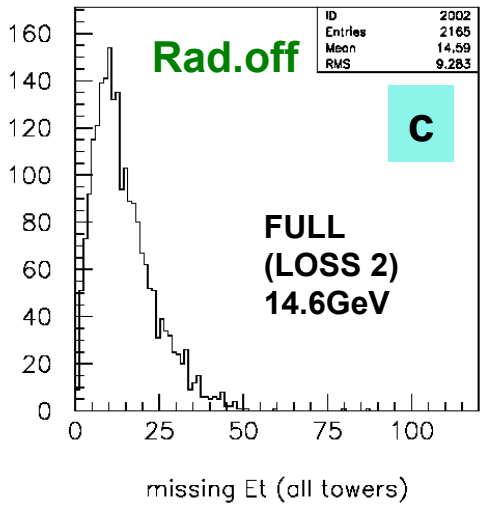
No fine tuning for energy scale.

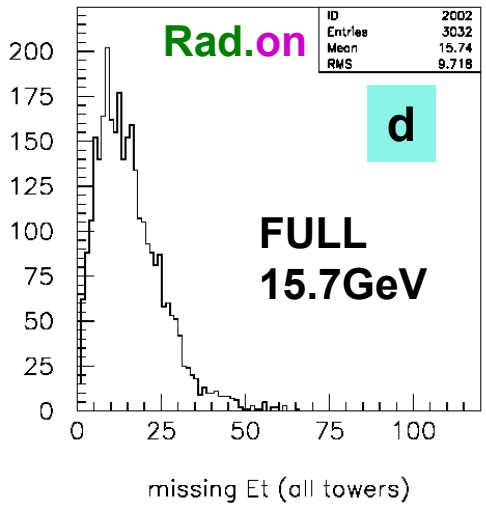
MET in Z'(120)→jj





← Not much difference





Summary

No difference is seen with/without EE in Mass(Z'(120)→jj).

- σ(M) ~ 12-13% without IR/FR (radiation).
- σ(M) ~ 22% with IR/FR.

No difference is seen with/without EE in MET in Z'(120)→jj sample

- σ(MET) ~ 14-15% without IR/FR.
- σ(MET) ~ 16% with IR/FR.

We plan to check jets and MET response in different channels, e.g.

- Wide range of QCD bins
- Some physics signal channels.